

REMARKS

Claims 1-10 and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Romesburg et al. (US patent No. 6,160,886).

Regarding independent claim 1, additional limitations are introduced in claim 1 to distinguish it from the prior art referenced by the Examiner. The first limitation is related to operating a postfilter 14 of the present invention in a frequency domain which is not covered by Romesburg et al. By merely observing the devices and data presented in the disclosure of Romesburg et al. it is clear that all calculations are handled in the time-domain. The second limitation ("said first and said second control signals are determined jointly by said statistical adaptive-filter controller using an optimized common algorithm") is added for emphasizing the main innovation introduced by the present invention, i.e., using a joint (common) control of blocks 21 and 14 by the statistical adaptive-filter controller 40, which separates it from the prior art.

Both limitations introduced in claim 1 are supported by the specification of the present invention as well as incorporated (directly or indirectly) in the dependent claims of the present invention (e.g., see claims 11, 12, 15, 16, etc.), therefore a new prior art search will not be necessary.

Thus, claim 1 does not read onto the prior art of Romesburg et al. because the introduced limitations are not disclosed by Romesburg et al.

Regarding dependent claims 2-9, these are dependent claims of a novel independent amended claim 1 which is not anticipated by Romesburg et al. under 35 USC 102(b), as shown above. Since each of these dependent claims narrows the scope of novel and non-obvious independent claim 1, and since the novelty and non-

obviousness of claim 1 compel the novelty and non-obviousness of dependent claims 2-9, claims 2-9 are not anticipated by Romesburg et al. under 35 USC 102(b) as well.

Dependent claim 10 is cancelled.

Regarding method claims 17-22 (amendments of claim 1 are also introduced in claim 17), these claims recite steps inherently performed by the various systems recited in claims 1, 2, 3, 6, and 8, respectively, and therefore, considerations presented above for claims 1, 2, 3, 6, and 8 are fully applied. Thus, claims 17-22 are not anticipated by Romesburg et al. under 35 USC 102(b).

Claims 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Sorqvist et al. (US patent No. 6,658,107). The applicant believes that the Examiner's arguments are not accurate and need further clarification.

Regarding independent claim 1, the following arguments are made by the Applicant in order to distinguish the present invention from the prior art.

The Examiner's arguments are analyzed based on MPEP guidelines quoted below:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP 2131. Further, "the identical invention must be shown in as complete detail as is contained in the . . . claim", *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), MPEP 2131."

The Examiner stated that the second control signal is a nonlinear transfer function (element $H(f)$ in Figure 4 of Sorqvist et al.) provided to the nonlinear processor 140 (which is equivalent to the postfilter 14 of the present invention). Sorqvist et al. does not talk, describe or discuss any additional block for calculating the function $H(f)$ provided to the nonlinear processor 140. On the other hand, Sorqvist et al. stated that "According to the invention, the filtering characteristics of the nonlinear processor 140 is dynamically computed based on the error signals $e(n)$ and the residual echo $s(n)$." ((col. 4, line 66 through col. 5, line 2). The signals $e(n)$ and $s(n)$ are shown as input signals to the nonlinear processor 140 in Figures 1 and 2 of Sorqvist et al., therefore, one can only conclude that the function $H(f)$, according to the disclosure of Sorqvist et al., is generated by the nonlinear processor 140 and there is no additional block for calculating the function $H(f)$. Therefore, the second control signal is provided by the nonlinear processor 140 itself.

The Examiner also refers to the linear model 130 of Sorqvist et al., which is updated using a well-known algorithm using a signal equivalent of the first control signal of the present invention, and the Examiner further alleges that the first control signal (for updating the linear model 130) is generated by the same block as the second control signal. However, Sorqvist et al. do not talk, describe, discuss or even hint that the first control signal is generated jointly by the same block as the second control signal, or, equivalently, as discussed above, that the first control signal is generated by the nonlinear processor 140. Therefore, Sorqvist et al. do not describe (directly or inherently) the statistical adaptive-filter controller 40 of the present invention which provides this joint control, as required

by the MPEP Section 2131 ("the identical invention must be shown in as complete detail as is contained in the .. claim").

This conclusion is consistent with a major problem of prior art solutions discussed in the Background section of the present invention: that is the first and the second controlled signals are generated independently by different blocks and there is no coordination between them.

Thus, based on the above remarks and further considering amendments introduced in claim 1 (see second limitation described above), claim 1 of the present invention is not anticipated by Sorqvist et al.

Claims 1, 11, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Enzner et al. (European Trans. On Telecommunications, vol. 13, no. 2, pages 103-114, March-April 2002). The applicant believes that the Examiner's arguments are not accurate and need further clarification.

First, the Examiner is not accurate to apply rejection under 35 U.S.C. 102(e), because 102(e) does not apply when there is a common author in the prior art reference and the present invention.

But even if we assume that 102(e) is applicable, as incorrectly alleged by the Examiner, similar arguments (as in case of the 102(e) rejection based on Sorqvist et al. reference) can be made by the Applicant in order to distinguish the present invention from the prior art.

Regarding claim 1, Enzner et al. do not describe (directly or inherently) the statistical adaptive-filter controller 40 of the present invention which provides the joint control of the echo canceller module 21 and the postfilter 14 of the present invention by providing the first and the second control signals,

as required by the MPEP Section 2131 ("the identical invention must be shown in as complete detail as is contained in the .. claim"). Thus, based on the above remarks and further considering amendments introduced in claim 1 (see second limitation described above), claim 1 of the present invention is not anticipated by Enzner et al.

Regarding dependent claims 11, 13 and 14, these are dependent claims of a novel independent amended claim 1 which is not anticipated by Enzner et al. under 35 USC 102(e), as shown above. Since each of these dependent claims narrows the scope of the novel and non-obvious independent claim 1, and since the novelty and non-obviousness of claim 1 compel novelty and non-obviousness of dependent claims 11, 13, and 14, claims 11, 13, and 14 are not anticipated by Enzner et al. under 35 USC 102(e) as well.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable by Sorqvist et al. (US patent No. 6,658,107) in view of Romesburg et al. (US patent No. 6,160,886). The applicant believes that the Examiner's arguments are not accurate and need further clarification in order to distinguish the present invention from these references.

MPEP paragraph 2143 states:

"To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or

suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

Regarding claim 12 of the present invention, the Examiner does not show that the references he quoted contain all the claim limitations as required by the third criterion (prior art references when combined must teach or suggest all the claim limitations) of the MPEP paragraph 2143 to establish a *prima facie* case of obviousness.

As stated above, the second control signal or the function $H(f)$, according to the disclosure of Sorqvist et al., is generated by the nonlinear processor 140 itself in the frequency domain (as described above), so even if teaching of Romesburg et al. for implementing the linear model 130 in a time domain (thus generating the first control signal) is applied by Sorqvist et al., it still will not describe all the limitations of claim 12 because the second control signal of Sorqvist et al. is generated by the nonlinear processor 140 itself and the gain control block 640 of Romesburg et al. (which is equivalent to the statistical adaptive-filter controller 40 of the present invention) is a part of the block 140 of Romesburg et al. which is equivalent to the linear model 130 Sorqvist et al. Thus, the first and the second control signals of Sorqvist et al. are generated by different blocks (130 and 140, respectively).

Even if, for the sake of argument only, we assume that the Examiner is correct alleging that the two references he recites describe all of the limitations of claim 12 of the present invention, it can be argued that the Examiner does not show that the references he quoted contain suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the reference or to combine reference teachings without the benefit of hindsight as required by the first criterion of MPEP paragraph 2143, quoted above. Indeed, none of the cited references suggests, discusses or even hints about the fundamental problem which is solved by the present invention: using the statistical adaptive-filter controller (or an equivalent block) for generating control signals for joint operation of the echo cancellation loop and postfiltering loop.

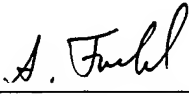
Moreover, Sorqvist et al. and/or Romesburg et al. do not provide teaching or suggestion for the reasonable expectation of success of combining teachings of Sorqvist et al. and Romesburg et al., as absolutely required by the MPEP paragraph 2143 to establish a *prima facie* case of obviousness.

The above arguments obviate the Examiner's 103(a) rejection of claim 12.

The objections and rejections of the Official Action of October 06, 2004, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested, and passage of the claims to issue is earnestly solicited.

Respectfully submitted,

Date: 2/4/05



Anatoly Frenkel
Registration No. 54,106

WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
755 Main Street, PO Box 224
Monroe CT 06468
(203) 261-1234